
आंशिक रूप से हाइड्रोजनीकृत राइस ब्रान
फैटी एसिड — विशिष्टि
(पहला पुनरीक्षण)

Partially Hydrogenated Rice Bran
Fatty Acids — Specification
(First Revision)

ICS 71.080.40

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FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Oils and Oilseeds Sectional Committee had been approved by the Food and Agriculture Division Council.

Rice bran oil is obtained from rice bran by solvent extraction. Hydrogenated rice bran fatty acid is obtained by splitting, distillation, hydrogenation and redistillation; or splitting, hydrogenation and distillation; or hydrogenation, splitting and distillation of rice bran oil.

Rice bran fatty acids contain 20 percent to 25 percent of saturated and 75 percent to 80 percent of unsaturated fatty acids. The main unsaturated fatty acids are oleic (40 percent to 50 percent) and linoleic (28 percent to 42 percent). The soap obtained from rice bran fatty acids is quite soft due to high percentage of unsaturated fatty acid content. For this reason, it is not possible to use high percentage of rice bran fatty acids in soap. However, if rice bran fatty acids are partially hydrogenated to reduce the unsaturated fatty acids, they can be used in large proportions in the soap.

This standard was originally published in 1988. This first revision has been brought out to update the product description to correctly reflect the process of manufacture of partially hydrogenated rice bran fatty acids and update the requirements of acid value and colour.

The composition of the committee responsible for the formulation of this standard is placed at Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard*PARTIALLY HYDROGENATED RICE BRAN FATTY ACIDS
— SPECIFICATION*(First Revision)***1 SCOPE**

This standard prescribes the requirements and methods of sampling and test for partially hydrogenated rice bran fatty acids.

2 REFERENCES

The standards listed below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below:

<i>IS No.</i>	<i>Title</i>
IS 548 (Part 1/Sec 2) : 2021	Methods of sampling and test for oils and fats Part 1 Sampling, physical and chemical tests, Section 2 Physical and chemical tests
IS 1070 : 1992	Reagent grade water — Specification (<i>third revision</i>)

3 REQUIREMENTS**3.1 Description**

The material shall be obtained by splitting, distillation, hydrogenation and redistillation; or splitting, hydrogenation and distillation; or hydrogenation, splitting and distillation of rice bran oil.

3.2 The material shall be free from sediment, suspended and other foreign matter and separated water. It shall be

clear on melting.

3.3 The material shall also comply with the requirements given in Table 1.

4 PACKING AND MARKING**4.1 Packing**

The material shall be supplied in suitable containers as agreed to between the purchaser and the supplier. The packaging material shall not affect the quality of the product/material being packed. The packing in mild steel drums shall be avoided.

4.2 Marking

4.2.1 The containers shall be securely closed and legibly and indelibly marked with the following information:

- Name and address of manufacturer and recognized trade-mark, if any;
- Name of the material;
- Net quantity of the material;
- Batch or lot number, in code or otherwise;
- Month and year of manufacture;
- Expiry date (Month and Year); and
- Any other information required under the *Legal Metrology (Packaged Commodities) Rules, 2011*.

4.2.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the product(s) may be marked with the Standard Mark.

Table 1 Requirements for Partially Hydrogenated Rice Bran Fatty Acids
(Clause 3.3)

Sl No.	Characteristic	Requirement	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	Moisture, percent by mass, <i>Max</i>	0.1	6 of IS 548 (Part 1/Sec 2)
ii)	Saponification value	198 – 206	16 of IS 548 (Part 1/Sec 2)
iii)	Acid value shall not differ from saponification value by more than	4	8 of IS 548 (Part 1/Sec 2)
iv)	Iodine value, <i>Max</i>	70	15 of IS 548 (Part 1/Sec 2)
v)	Mineral acidity	Nil	A-1
vi)	Ash, percent by mass, <i>Max</i>	0.2	A-2
vii)	Unsaponifiable matter, percent by mass, <i>Max</i>	1.0	9 of IS 548 (Part 1/Sec 2)
viii)	Titre, °C, <i>Min</i>	42	13 of IS 548 (Part 1/Sec 2)
ix)	Colour in a 1-in cell on the Lovibond scale expressed as <i>Y + 5R</i> , not deeper than	25	14.1 of IS 548 (Part 1/Sec 2)

ANNEX A
[Table 1, *Sl No.* (v) and (vi)]

TEST FOR MINERAL ACIDITY AND ASH

A-1 TEST FOR MINERAL ACIDITY

A-1.1 Quality of Reagents

Unless specified otherwise, pure chemicals and distilled water (*see* IS 1070) shall be employed in tests.

NOTE – ‘Pure chemicals’ shall mean chemicals that do not contain impurities which affect the results of analysis.

A-1.2 Reagents

A-1.2.1 Methyl Orange Indicator — 0.05 percent (*m/v*) solution

A-1.2.2 Light Petroleum Ether — (60 °C/80 °C)

A-1.3 Procedure

Measure 10 ml of the melted sample into a separating funnel and shake intimately with three successive 10 ml portions of hot water. The temperature of the hot water should be more than the melting point of rice bran fatty acids. Combine the aqueous extracts, transfer to another separating funnel and remove traces of fatty acids in the water by extraction with light petroleum ether. Test the aqueous extract so obtained with a few drops of methyl orange indicator.

A-1.4 The material shall be taken to have satisfied the requirements of the test if the indicator does not show acid reaction.

A-2 DETERMINATION OF ASH

A-2.1 Apparatus

A-2.1.1 Platinum Crucible

A-2.1.2 Desiccator — containing an efficient desiccant such as fused calcium chloride

A-2.2 Procedure

Weigh accurately about 10 g of the air-dried material into a platinum crucible which has been previously dried, cooled in the desiccator and weighed. Heat the crucible over a low flame and ignite the contents gently. Incinerate the residue in a muffle furnace at (550 ± 10) °C until free from carbon. Cool the crucible in a desiccator and weigh. Repeat the above procedure of heating, cooling and weighing until the difference between two successive weighings does not exceed 1 mg.

A-2.3 Calculation

$$\text{Ash, percent by mass} = \frac{100 m}{M}$$

where

m = mass, in g, of the ash, and

M = mass, in g, of the material taken for the test.

ANNEX B
(Foreword)

COMMITTEE COMPOSITION

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